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Face to {VIRTUAL} Face

Telepresence technology produces lifelike videoconferences. But can you afford it? PAGE 18

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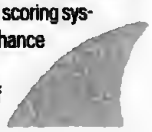

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■ ONLINE CHATTER

RESPONSE TO:

The New Job Search

April 5, 2010

This story drags out the old advice about learning new skills while you're unemployed. It's a nice idea, but in today's economy it ain't worth a bucket of warm spit. In the past several years, I've talked to over 100 recruiters and had several dozen interviews, and every one of them said the same thing: "We don't care what you've taught yourself or took classes in. We want to see that you've used those skills at a past employer. If you haven't, *sayonara*!"

■ **Submitted by:** *BC*

RESPONSES TO:

The Shrinking Female IT Workforce

April 5, 2010

My kids love to work on computers, but I will be steering them toward careers that will last, such as doctor, nurse or dentist. They can't outsource those jobs yet.

■ **Submitted by:** *Quackula*

So women are leaving IT because of long hours, poor treatment by managers, no advancement possibilities, and wage stagnation? Congratulations! Now you're being treated just like the men are!

■ **Submitted by:** *Anonymous*

RESPONSE TO:

Career Watch: Making Cobol Cool Again

April 5, 2010

Anyone who, like me, has been using Cobol for a long time knows that it has always been cool. It's a well-structured programming language that lends itself to producing documented, transparent code. Oh, yes, Cobol is great, and that's the reason it has survived for the last three decades, when people in the IT industry erroneously predicted its early demise.

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■ **Submitted by:** *OzOle*

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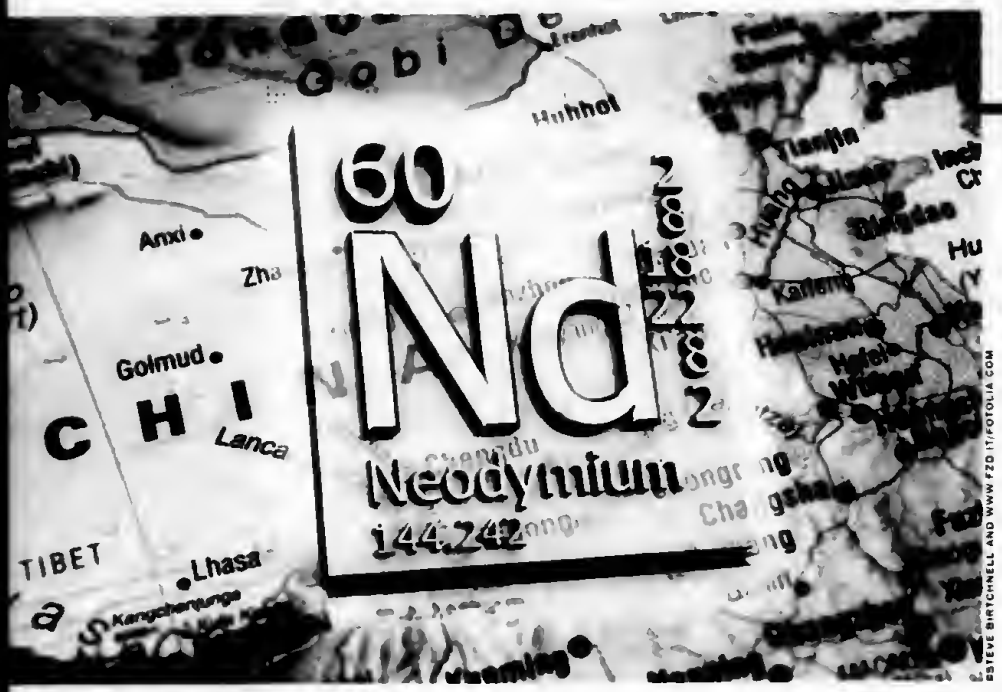

STEVE BIRTCHNELL AND WWW.FZD.IT/FOTOLIA.COM

RAW MATERIALS

China Controls Key Metal for Hard Drives

THE U.S. has become almost completely dependent on China for rare earth metals, including neodymium, which is used in hard disk drive magnets, according to testimony at a congressional hearing last month.

Nearly 100% of neodymium production today is in China.

"China appears to view rare earth [metals] as one of the incentives they can offer a technology firm scouting for a new plant location," said Rep. Brad Miller (D-N.C.), at a hearing of the U.S. House Committee on Science and Technology.

Jack Lifton, an independent consultant, said that although the U.S. has a sufficient natural supply of rare earth elements, mining them isn't profitable because the extremely low price set by China has essentially given that country a monopoly.

The major source of rare earth deposits in the U.S. was at Mountain Pass, Calif. Mining there ceased in 2002, but new owner Molycorp Minerals LLC hopes to resume operations.

One of the last U.S. companies to manufacture rare earth magnets was Magnequench Inc., which was acquired by a Chinese company in 1995 and then by Toronto-based Neo Material Technologies Inc. in 2005.

Mark Smith, CEO of Molycorp, said that "while the U.S. still possesses the technical expertise, we have lost the necessary infrastructure to manufacture the rare earth metals and magnets that fuel next-generation technologies."

– Patrick Thibodeau

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SECURITY MONITOR

FBI: Cybercrime Crews Adopting Corporate Models

Criminal hacker organizations are operating with increasing corporate-like efficiency and specialization, according to Steven Chabinsky, deputy assistant director in the FBI's cyber division.

At FOSE, a government IT trade show held in Washington last month, Chabinsky described the following specialized roles in cybercrime organizations:

- **Coders,** who write the exploits and malware.
- **Distributors,** who trade and sell stolen data.
- **Tech experts,** who maintain the criminal enterprise's IT infrastructure.
- **Hackers,** who search for and exploit vulnerabilities in applications, systems and networks.
- **Fraudsters,** who woo potential victims with social engineering schemes like phishing and spam.
- **Hosted system providers,** who offer illicit content servers.
- **Cashiers,** who control drop accounts and provide names and accounts to other criminals for a fee.
- **Money mules,** who complete wire transfers between bank accounts.
- **Tellers,** who transfer and launder illicit earnings through digital currency services.
- **Organization leaders,** who assemble the team and choose the targets.

– PATRICK THIBODEAU

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BETWEEN THE LINES
By John Klossner

FUTURE WATCH

HP Touts Major Advance in 'Memristors'

HEWLETT-PACKARD CO. researchers announced earlier this month that an electrical circuit technology they're developing, called the "memristor," could fundamentally change the way computers are designed.

The memristor is essentially a resistor with memory. Though it was initially designed to expand devices' memory capacity, HP Labs researchers recently discovered that it also could be used for logic computations.

The dramatic discovery means that within six to eight years, the memristor could handle both memory and logic in the same chip at the same time.

"Memristors have the potential to turn the computing world upside down," said Dan Olds, an analyst at Gabriel Consulting Group Inc. "Because they are both processor and storage, they act much like synapses in the human brain. Networked together, they look to be very much faster at tasks like pattern recognition than conventional computers. Because of the memory aspect, they can 'learn' much better than today's systems."

Still in the research stage, the memristor will give transistors a sort of turbo boost, said Stan Williams, a senior fellow at HP Labs. He said that he expects to see memristors used for memory in devices in three years. While they would compete with flash memory, they would have more memory, use less power and be a lot faster.

"This is potentially a major game-changer," said industry analyst Rob Enderle. "If they can get this to market timely and priced well, it could change the face of personal electronics."

Memristors could also bring "the 3-D Web into reality," Olds added. "They have incredible processing power for their size and will be able to generate content fast enough to make virtual experiences seem real."

– Sharon Gaudin

Micro Burst

In a survey of 2,481 U.S. companies,

32%

of the respondents said they're unsure how to measure the payoff from business analytics.

INNOVATION

Starbucks Tries Mobile Payments

Coffee lovers can now flash Apple iPhones or iPod Touches to pay for lattes, pastries and other items at more than 1,000 Starbucks locations.

Last month, Starbucks Corp. announced that it was expanding a pilot test of a mobile payment system to 1,002 coffee shops inside Target stores.

The pilot of the Starbucks Card Mobile App, which started last September at 16 company-operated stores in Seattle and Northern California, was successful enough to expand further, a spokeswoman said.

But no plans have been announced for expansion to the rest of the more than 11,000 Starbucks locations in the U.S.

The Starbucks payment app – which is available free of charge at Apple's App Store – lets customers use a credit card to put money on a virtual Starbucks card. To make a purchase, a customer just waves an iPhone or iPod Touch, which has a unique bar code on its screen, over a bar code reader at the Starbucks payment counter.

– MATT HAMBLEN

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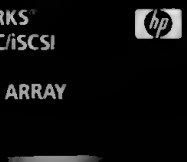

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Targeted Cyberattacks Testing IT Managers

The attack on Google prompts fears that the bad guys are infiltrating business networks.

By Jaikumar Vijayan

TARGETED cyberattacks of the sort that hit Google Inc. earlier this year are testing enterprise security models in new ways, and they represent an imminent threat to sensitive corporate data.

State-sponsored groups with deep technical skills and computing resources have long been directing such attacks against government and military targets. However, Google's disclosure in January that its network was attacked by China-based hackers stoked long-standing fears that cybercrooks would expand their horizons and start aiming targeted attacks at commercial networks.

Some experts say it's likely that widespread attacks have already begun. "If you have not yet identified systems within your enterprise that have been compromised through these advanced attacks, you probably are very lucky — or you aren't looking closely enough," said Amit Yoran, former director of the U.S Department of Homeland Security's National Cyber Security Division and current CEO of security vendor NetWitness Corp.

Unlike the e-mail- and network-borne worms and viruses that have been hitting corporate networks for years, targeted attacks are stealthier and virtually impossible to fully block. Hackers typically rely on sophisticated social engineering techniques to break into networks, maintain access to them without detection and continually snoop out and steal sensitive information.

Some security pros suggest that IT managers are better off focusing on mitigating damage from targeted attacks instead of trying to prevent them.

Sean Arries, a researcher at Terremark Worldwide Inc., a Miami-based provider of IT infrastructure services, said traditional security measures, such as signature-based antimalware tools, can't prevent targeted attacks because the perpetrators often take advantage of zero-day threats for which there are no known defenses.

Instead, he said, companies should take steps to strengthen their ability to detect intrusions and to respond quickly. Arries noted that a gusher of data going out over the network, for example, is a sign that something's amiss.

Paul Wood, a senior intelligence analyst at Symantec Corp.'s MessageLabs Intelligence unit, said that cloud-based security controls could help IT managers better detect targeted attacks. With a hosted security service, the provider sifts through large volumes of network traffic daily and therefore could spot suspicious activity sooner than internal IT operators who handle multiple jobs, he added.

Enabling remote logging capabilities is also crucial to detecting attacks, Arries said. Those who break into a server tend to wipe out activity logs and any other evidence of their presence from the server, he said. One way to get around that is to make sure that all logs are created at and stored in a central location. ■

> **"If you have not yet identified systems within your enterprise that have been compromised through these advanced attacks, you probably are very lucky – or you aren't looking closely enough.**
> **AMIT YORAN,** CEO, NETWITNESS CORP.

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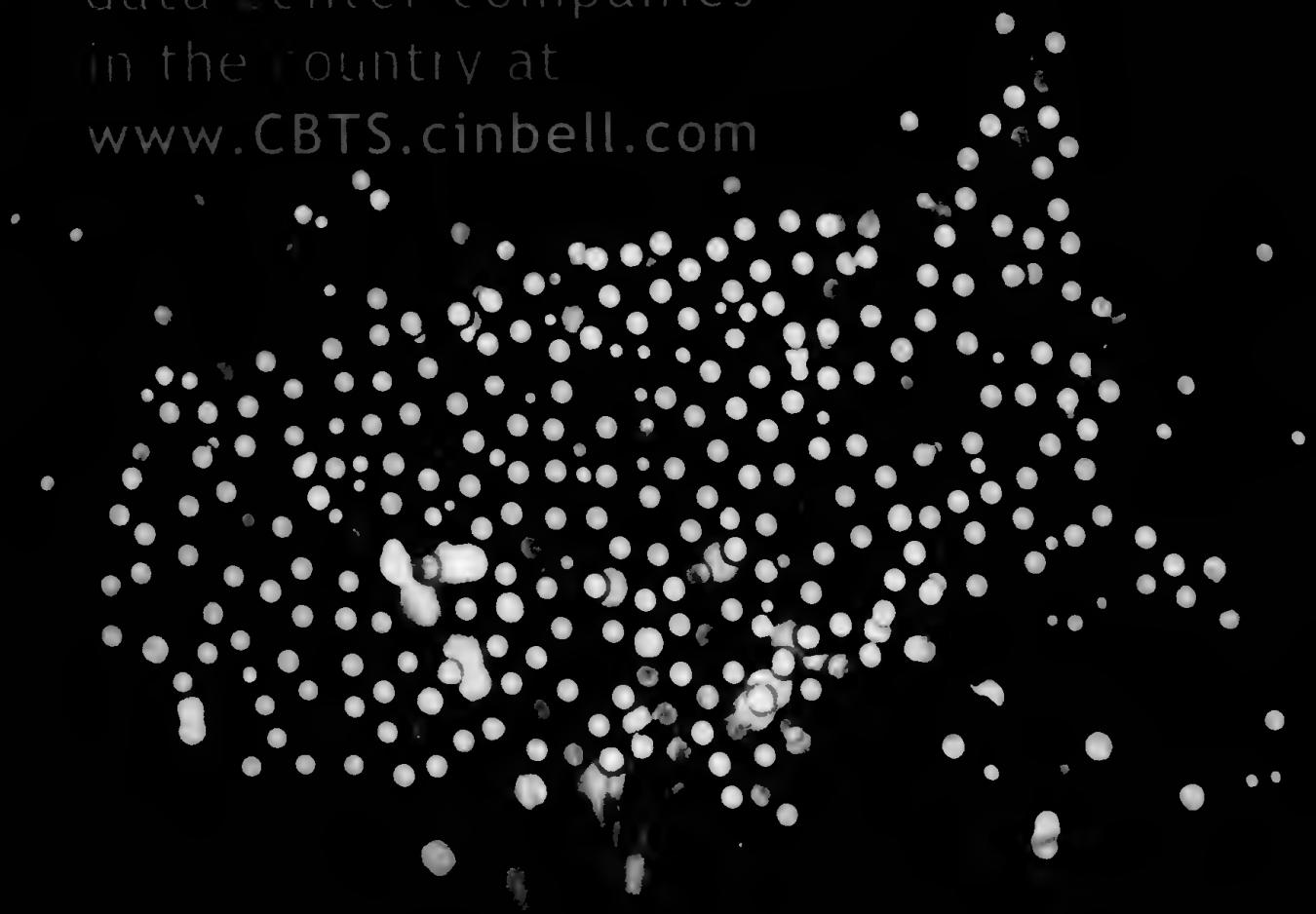

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As Cloud Computing Grows, Customer Frustration Mounts

Some users knock the lack of cloud security standards and dubious contract terms.

By Patrick Thibodeau

SANTA CLARA, CALIF.

USERS WHO turned to cloud computing for some of its obvious benefits, such as the ability to rapidly expand and provision systems, are starting to shift their focus to finding ways to fix some early weaknesses.

Cloud computing today has some of the characteristics of a Wild West boom town, but its unchecked growth is leading to frustration, a word that one hears more and more in user discussions about hosted services.

For example, cloud customers — and some vendors as well — are increasingly grousing about the lack of data handling and security standards. Some note that there aren't even rules that would require cloud vendors to disclose where their clients' data is stored — even if it's housed in countries not bound by U.S. data security laws.

Such frustrations are becoming more evident as more enterprises embrace the cloud computing model.

Take Orbitz LLC, the online travel company whose businesses offer an increasingly broad range of services, from scheduling golf tee times to booking tickets for concerts and cruises.

Ed Bellis, chief information security officer at Orbitz, says the company's decision to use cloud-based software-as-a-service (SaaS) offerings enabled it to grow more rapidly and freed managers to concentrate on core competencies.

However, Orbitz, which is both a user and a provider of cloud-based services, sees an urgent need for cloud security standards, Bellis said at the SaaScon 2010 conference here earlier this month. For instance, Orbitz must address a range of due diligence requirements that are "all across the board," ranging from on-site audits to data center inspections.

Standards being developed by the year-old Cloud Security Alliance, a nonprofit group funded by both cloud computing users and providers could provide a solution. The standards would expose data in a common format, which Bellis said would let customers know exactly "what our security posture is."

Such standards "would be heaven," said Bellis, and would "cut out a third of our internal work on due diligence." However, the path to such a standard would be long and agonizing, since it would require the support of large numbers of cloud computing users and providers.

■ [Cloud standards] would be heaven [and would] cut out a third of our internal work on due diligence.
ED BELLIS, CISO, ORBITZ LLC

SaaScon attendee Keith Waldorf, vice president of operations at Doctor Dispense LLC, was critical of inflexible contract terms set by some vendors.

He said that one service-level agreement that the e-prescription company had with a cloud provider locked Doctor Dispense into using only the hardware and software available from the provider when the contract was signed, even if the provider upgraded its offerings.

Cloud agreements today "are all over the map, and it's really vendor-driven," said Waldorf, noting that his company has switched to another SaaS provider.

Large organizations should take advantage of their size when negotiating contracts. For example, as part of its contract to use Google Apps hosted office applications, the Los Angeles city government got Google Inc. to agree to pay unlimited damages should it ever violate nondisclosure agreements.

But most users lack such clout, noted Jim Reavis, founder of the Cloud Security Alliance. In fact, in some cases, cloud providers may not even have to provide the logging information needed to prove that there was a breach, he added.

None of those interviewed were willing to try to predict when users could expect to see contracts that require set levels of transparency about data handling procedures and security. ■

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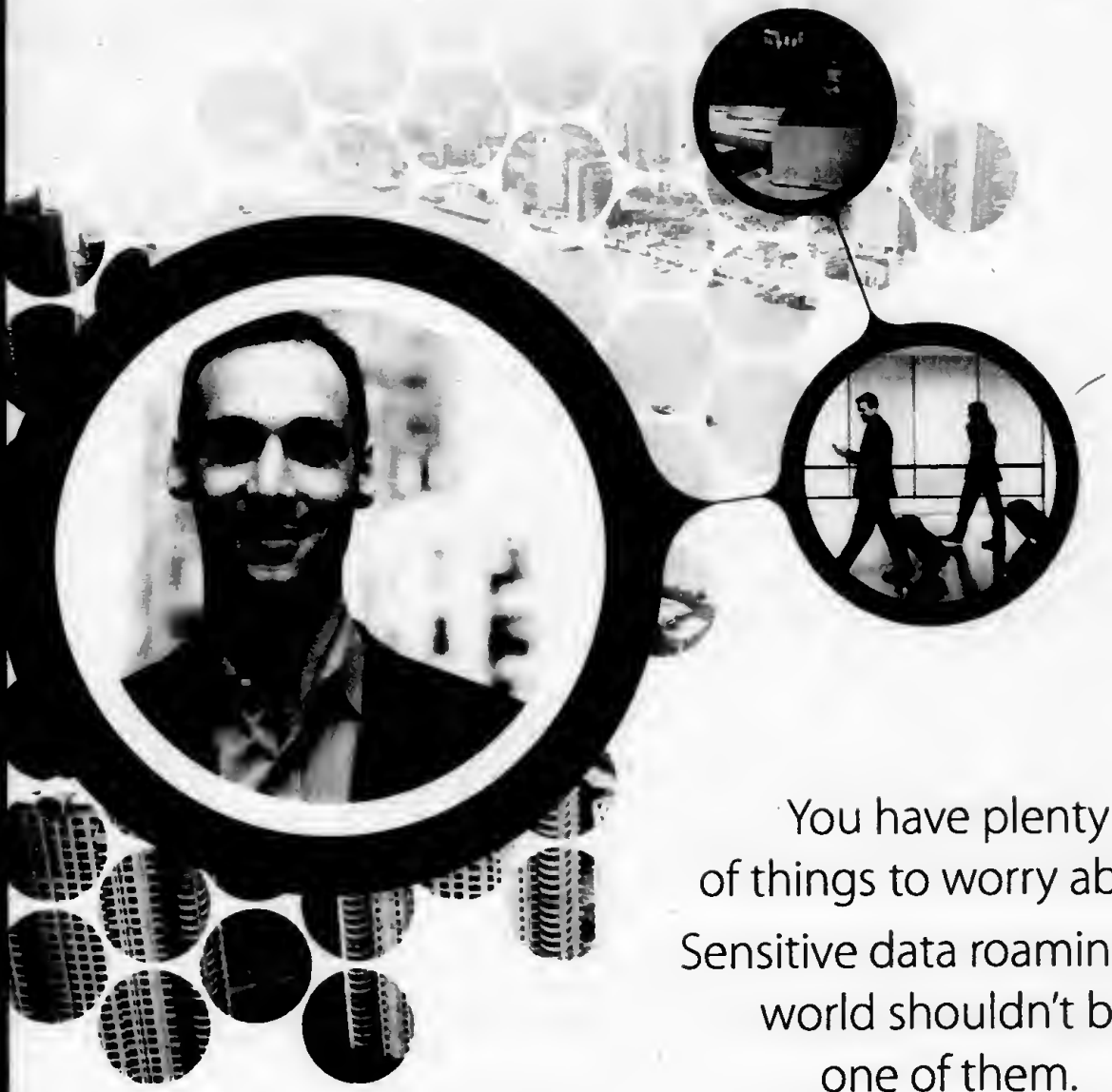

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Dossier

Name: John Curran

Title: President and CEO

Organization: American Registry for Internet Numbers

Location: Chantilly, Va.

Favorite technology: "The Internet-based protocols, including IP and the Web-based protocols. I am a huge fan."

Something people don't know about him: "I have been chief technology officer at three companies, and a CIO."

Favorite pastime: "My 40-foot sailboat."

If I weren't CEO at ARIN, I'd probably be: "A park ranger."

Recent good read: "*National Suicide: How Washington Is Destroying the American Dream from A to Z*, by Martin L. Gross. It's a very thought-provoking book."

■ THE GRILL

John Curran

The guardian of North America's Internet addresses warns that **the IPv4 pool is drying up fast.** He explains why he thinks companies ought to **start IPv6 upgrades now.**

As president of the American Registry for Internet Numbers (ARIN), one of several regional Internet registries, John Curran oversees the issuance of Internet addresses for most of North America. The problem: IP Version 4 Internet addresses are going, going, gone. And users who get new IPv6 addresses could have a lousy experience when visiting Web sites that haven't been updated for IPv6 — and they may not even know why. Curran explains when the world will run out of IPv4 addresses and what it takes to upgrade to IPv6.

Why are we running out of Internet addresses? We created IPv4, a 32-bit IP address architecture, more than 30 years ago. IPv4 gives a total of about 4 billion possible addresses. That seemed like a lot, but when you think about it now, with the number of people on the planet, the pervasive nature of the Internet and the number of devices each one of us has, 4 billion is a fairly small number.

In the early '90s we realized that at the rate the Internet was going, we were going to run out of address space, and [so we] came up with a new proto-

Continued on page 16

Qwest

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"You'll see the largest carriers run out of IPv4 addresses and start connecting customers with IPv6. . . . Companies will be caught off guard.

Continued from page 14

col, IPv6. We standardized that in the mid-'90s. The heavy work of designing the protocols has been done.

How long will it be before the inventory of remaining IPv4 addresses is depleted? Based on how quickly we are drawing numbers out of the pool, we estimate that we have about 560 days left.

Then what? People have compared this to a Y2K event, but this big event will happen much more incrementally. You'll see the largest carriers run out of IPv4 addresses and start connecting customers with IPv6. This will happen in the background.

It's much more of a creeping change, and it's easy to ignore. It will be very subtle when it occurs, and companies will be caught off guard.

How many Web sites have enabled IPv6 so far? Right now, between 3% and 4% of Web sites out there have IPv6 turned on. That's not where we should be, because we're getting up now to the point of transition. It's a scant two years away.

Is anyone paying attention to this issue? Yes. The network providers, the national backbones. They need access to new addresses to add new customers. Effectively, the Internet becomes full. So they have to learn to connect customers up with IPv6, they have to run IPv4 and IPv6 in parallel, and they have to learn how to put gateways in that map IPv6 customers back to IPv4 Web sites, to the old Internet.

Sounds like an ISP problem. Why should businesses care? When an organization or company or business attempts to access your site and you only support IPv4, their ISP will most likely run them through that translation gateway. That will make it look like they're coming to you via IPv4, but they'll be relying on that carrier's gateway.

The customer will come at your IPv4 Web site with an IPv4 address that's shared in the cloud with all of that ISP's other IPv6 customers. When that customer accesses your Web site, he's going to see slower performance than if he's connecting directly via IPv6. Sites with streaming audio or video in particular may have performance issues. Performance will vary depending on how many people are going through that gateway.

Your IPv4 Web site will still be connected to the Internet, but a growing portion of the Internet will be using a protocol that you're not running. A decade out, you may find yourself sitting in an Internet backwater.

What do people need to do to be ready? The public Internet is what's going IPv6. If you have a public Web site, all you need to do is enable IPv6. You just add another protocol over the same wires, through the same firewalls, through the same router.

You turn on IPv6 on the Web server, on the router, and make sure the carrier has configured it. It's not that hard at all. It's configuration work.

Will this require equipment changes? Almost all of the major operating systems have IPv6 support. All of the major router equipment and firewalls support it. It may not be the same set of features, it may not be the same performance, but for leading vendors' equipment, you will find IPv6 already installed and waiting to be enabled.

Why aren't more organizations migrating? It's something that's truly optional, that isn't going to be noticed, but could have side effects. For example, when you configure it, if you don't get the firewall rule right, you may expose your company to security issues. Why would you take the risk of impacting production earlier than you absolutely have to?

So you have to look at the security implications. Your external network goes through firewalls — security equipment. You need to make sure you have the same functionality with IPv6.

You also have to look at your infrastructure. Let's say someone calls into your help desk and tries to enter his IP address, and instead of four groups of numbers separated by periods [as for] an IPv4 address, it's IPv6 — extremely long, all hexadecimal — and the help desk can't enter it into their help desk software because the field isn't big enough.

Tools that report where customers are coming from by IP address may fail because an IPv6 address is 40 characters long in some cases.

It's still about a year and a half away. Why not wait until then to address the issue? Wait 18 months, and you might find yourself with thousands of other folks who are trying to solve the same problem. The price you'll pay to get experienced help at that point will be much higher.

— Interview by **Robert L. Mitchell**

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The SNW "Best Practices" Award recipients were honored on Wednesday, April 14th at SNW in Orlando, Florida

Thank you to our "Best Practices" judges for SNW Spring 2010:

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SNW, in conjunction with Computerworld and the Storage Networking Industry Association (SNIA), proudly announces the winners of the SNW "Best Practices" Awards program. This program honors users' "best practice" case studies selected from a field of qualified applicants.

Best Practices in Green Computing, Energy Efficiency and the Data Center

WINNER: *[illegible] Rangers*, Woodbridge, Canada

Finalists: *[illegible] (California Institute of [illegible])*, Pasadena, California
[illegible] Technologies, Bangalore, India
[illegible]ance Tech Services, Mumbai, India
[illegible]ited Natural Foods, Providence, Rhode Island

Best Practices in Planning, Designing and Building Next Generation Storage and Server Infrastructure

WINNER: *Wells Fargo and Company*, San Francisco, California

Finalists: *General Motors*, Detroit, Michigan
[illegible], Sunnyvale, California
[illegible] Hospital, Salem, Oregon
[illegible] Food Inc., Concord, [illegible]setts

Best Practices in Storage Resiliency, Data Protection and Recovery

WINNER: *State Street Corporation*, Boston, Massachusetts

Finalists: *American Society of Health-System Pharmacists*, Bethesda, Maryland
Intermountain FX, Salt Lake City, Utah
St. Luke's Health System, Boise, Idaho
Town of South Windsor, South Windsor, Connecticut

Best Practices in Technology Innovation and Promise

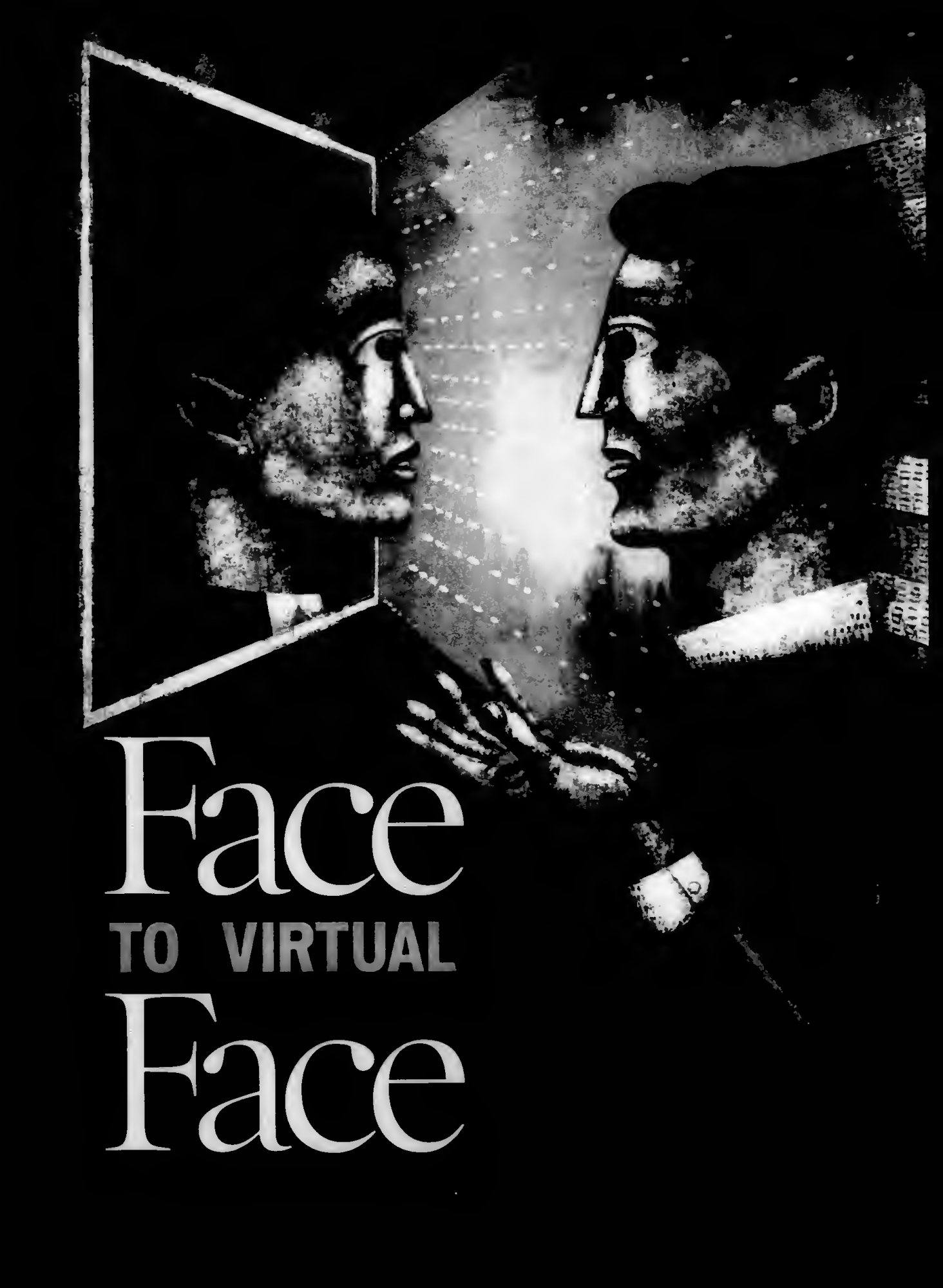
WINNER: *The Greater Educational Opportunities Foundation*, Indianapolis, Indiana

Finalists: *Applied Materials*, Austin, Texas
County of Dinwiddie, Dinwiddie, Virginia
Orlando Magic, Orlando, Florida
Renew Data Corporation, Austin, Texas

Best Practices in Virtualization and Cloud Computing

WINNER: *Kelley Blue Book*, Irvine, California

Finalists: *Lionbridge Technologies*, Waltham, Massachusetts
Orbital Sciences Corporation, Chandler, Arizona
Partners Healthcare, Charlestown, Massachusetts
Sprint, Overland Park, Kansas



Face TO VIRTUAL Face

Telepresence technology can slash travel costs — if you can afford it, and if it's really used. BY ESTHER SHEIN

INSURANCE GIANT MetLife Inc. is trying to reduce the amount of time employees spend in airports — not only to save on travel costs, but also to improve employees' quality of life by keeping them home as much as possible. That's why the company has eagerly embraced telepresence technology.

Telepresence systems include high-end, high-definition video and audio communications for meetings — Forrester Research Inc. calls telepresence "the Cadillac of videoconferencing." The goal is to make everyone involved in the meetings feel as if they're actually in the room with the other attendees, regardless of where they're physically situated.

Toward that end, MetLife is using Cisco Systems Inc.'s TelePresence technology in three conference rooms, in Chicago, New York and Somerset, N.J., and it plans to install similar systems in additional offices nationally and internationally this year.

"Instead of having to take people away from their families, you walk down to the room and turn on the lights and have your three-hour meeting, and it's extremely effective," says Anthony Nugent, executive vice president of employee benefits sales at MetLife. He regularly uses telepresence to communicate with his direct reports in Chicago and Somerset, and the clarity is so good that "everyone jokes that they can reach a Coke across the table" from one city to another, he says with a laugh.

MetLife also sees telepresence as a way to help the company meet its goal of reducing its carbon emissions by 20% this year, says Nugent. The company finished its initial telepresence rollout last May and hasn't yet determined exact savings, but Nugent estimates that the systems will yield double-digit ROI in reduced travel costs alone.

DIFFERENT DEFINITIONS

Depending on how a system is marketed, there can be a blurry line between high-definition videoconferencing and full-blown telepresence. Some vendors call a single-screen, high-end videoconferencing system telepresence, says Roopam Jain, an analyst at Frost & Sullivan Ltd. Others define telepresence as a system with multiple screens and customized furniture.

Telepresence essentially uses the same basic technology as videoconferencing, says Ira Weinstein, an analyst at Wainhouse Research LLC. "Anyone who says this is not at least in some way related to videoconferencing is selling you something," he says. The difference, he notes, is that telepresence offers greater visual detail, higher quality and usability, and a better environment.

A telepresence system at a minimum must include codecs (chips that convert data), compression and decompression devices, cameras, displays and what Weinstein calls a telepresence user interface or engine. He says one screen can work fine, depending on a company's needs.

Step into a telepresence studio and you'll find a typical conference table along with a couple of very large flat-screen displays. The wide screens fill your peripheral vision, so "your brain sees that as being in the same room" as the on-screen participants, Weinstein says. "This is a way of tricking your mind and making your brain think you're at an in-person meeting.

"These telepresence solutions are about meeting, bonding, teaming and meeting face-to-face without getting on the plane — with five minutes' notice," he adds. "I can conveniently meet with people without sacrificing the experience."

Use of both high-definition videoconferencing and telepresence is on the rise, despite high prices. Telepresence systems can cost $100,000 to $400,000 for a complete studio setup. On top of that, there are recurring monthly fees ranging from a few thousand dollars to more than $18,000, depending on the level of service and the amount of network bandwidth.

In comparison, even high-definition videoconferencing systems cost much less: about $6,000.

Because of their high price, telepresence systems — including Cisco's CPS 3000, Hewlett-Packard's Halo, Teliris's 6G and Polycom's HDX 7000 and HDX 9004 — tend to be geared toward large

AT A GLANCE

Telepresence

DEFINITION: Telepresence videoconferencing emulates in-person meetings with life-size images of remote participants. Specially constructed telepresence rooms provide the lighting, sound, acoustics, furniture and ambiance of a face-to-face meeting experience.

WHEN TO USE IT: A telepresence-quality room is appropriate if elements like body language, graphics, product detail and color are as critical to the meeting as the discussion. Otherwise, consider high-definition videoconferencing systems, which offer excellent quality, require less bandwidth and don't cost as much.

NETWORKING: Bandwidth requirements range from 1.5Mbit/sec. to more than 12Mbit/sec. per session, even with compression. Some IT departments hesitate to run telepresence over the corporate IP network and instead use an overlay IP network strategy.

AVERAGE COST FOR A CONFERENCE-READY ROOM: $300,000

SOURCE: FORRESTER RESEARCH INC

ILLUSTRATION BY RICHARD DOWNS

Cisco's TelePresence technology presents "life-size" images that make it easy to discern facial expressions and other details.

enterprises that have sky-high travel expenses. High-definition videoconferencing systems, on the other hand, are considered more appropriate for, say, small and midsize businesses and branch offices.

In addition, network provisioning and management costs must be factored in. "Some customer environments have excess bandwidth available on their networks that they can utilize to run telepresence," Jain says. In other cases, she adds, users need to acquire a separate overlay IP network to ensure that they have the bandwidth required for telepresence.

Jain expects the telepresence market to grow to over $1.7 billion by 2014, up from $350 million in 2008. "The expectation for 2009 was that telepresence was going to take a hit because of the recession and low [capital expenditure] budgets, but we continue to see high growth numbers from the telepresence vendors," she says.

Weinstein agrees that telepresence is a fast-growing segment of the overall videoconference business but notes that "it started off small and is not the lion's share of the market" today. The real action, he says, is still in sales of "a typical videoconferencing solution, high-definition or not."

Telepresence may not be widespread, but multinationals such as PepsiCo Inc. and The Procter & Gamble Co. have jumped on the bandwagon. PepsiCo CIO Robert Dixon said in a statement that using telepresence "will reinvent the way we work" while cutting down on travel, which boosts productivity and reduces the company's environmental impact.

Last September, a P&G executive said the consumer products giant had installed 70 Cisco telepresence rooms over the past two years. With 138,000 employees in 80 countries, P&G estimates that it has saved $4 for every $1 invested in the systems, thanks to decreases in travel costs and improvements in productivity.

Using HP's Halo Multipoint feature, meeting participants can connect multiple locations around the world at the same time.

And last month, Bank of America Corp. announced that it plans to roll out 200 Cisco TelePresence systems globally by year's end. That would give it the largest telepresence network used by a single company so far. The bank currently uses 28 of the systems for meetings and training.

At MetLife, the three Cisco telepresence systems cost just under $1 million to install, according to Paul Galvin, vice

Continued on page 22

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Spend Money {} Money

TELEPRESENCE requires a hefty upfront investment: The price tag quickly reaches more than $1 million for a three-location, multipoint setup, for example. But over five years, global organizations deploying telepresence can reap a return on investment of 47% or more, according to a report by Forrester Research analyst Claire Schooley.

The biggest savings come from reductions in travel. For example, a 20% reduction yields savings of $1 million for a company with a $5 million travel budget, the report notes.

However, achieving that ROI requires a change in corporate behavior: Old habits die hard, but executives will have to stop traveling so much. And they will need to set an example by using the telepresence rooms themselves and reminding employees that telepresence is just as good as an in-person meeting, the Forrester report says.

Companies that can't afford high-end telepresence systems might want to consider less expensive alternatives from vendors like LifeSize Communications Inc. and Telanetix Inc., according to a separate Forrester report.

Those companies provide hardware that's cheaper than the high-end systems, but they don't offer turnkey services such as installing the AV equipment and setting up the lighting, so users would have to find other sources of those services, the report said.

"Beware of trading cost for the overall telepresence experience," Forrester says. Only a reliable "you are there" experience will generate the usage required to achieve a strong ROI.

– MITCH BETTS

Continued from page 20

president of enterprise services in the IT group. Nugent says he uses both videoconferencing and telepresence, depending on what his needs are. Videoconferencing is better for one-on-one situations, such as "if someone is going to do a quick presentation to me," he says, but telepresence is ideal for meetings with several participants in multiple offices.

Telepresence lets him have face-to face-contact with a broader group, "so it allows me to get to know people better," Nugent says. He runs an organization with people based all over the country, and he used to require his direct reports to come to New York for quarterly reviews. Now they can stay in their offices and he can meet with a wider range of employees.

"Telepresence allows me to see and virtually interact with more people on my team, instead of just my direct reports," says Nugent. "When we use telepresence for meetings, people who wouldn't normally be asked to travel to New York have the opportunity to make presentations and get valuable exposure to executive management. It really facilitates face-to-face interaction with a broader cross-section of employees on an economically efficient basis."

MetLife is considering putting a telepresence system at a business processing facility in India so employees won't have to fly there to see it. The company is also looking at ways to utilize telepresence with salespeople across the country. The idea is to have as many people using the system as possible, Nugent says.

"Flying out of Boston for a meeting when I was 20 sounded great, but the sales pitch I always give is we're respecting the time of the employee," he says. "So if we can give a person the effectiveness of being there and then be home with his family, it's two wins."

ALMOST LIKE BEING THERE

Both high-definition videoconferencing and telepresence are used at Kansas City, Mo.-based law firm Lathrop & Gage LLP, where employees conduct more than 300 meetings a month. The 600-person firm uses Polycom's HDX 7000 and HDX 9004 systems, along with a Steelhead WAN optimization device from Riverbed Technology Inc., in six dedicated rooms in the Kansas City office. There's also at least one system at each of the firm's 10 other U.S. offices.

Polycom's personal telepresence system features a 20-inch screen and works with either a PC or a Mac.

"It's a more meaningful way to conduct [meetings] than over the phone," says CEO Joel Voran, who uses the system about three times a week. While he still tries to visit all of the firm's offices twice a year, Voran says use of the Polycom systems has significantly reduced the need for lawyers to fly to Kansas City.

The Steelhead WAN optimization device identifies network traffic and gives priority to videoconferencing packets to provide adequate bandwidth and ensure high-quality picture and sound.

"The clarity has been impressive," Voran says. "At one of our very first meetings at one of our offices, I could see the brand of the beverage someone was drinking, and that made the partner sit up and take notice."

"This is a billable-hour profession," says Lathrop & Gage CIO Ben Weinberger, who adds that one attorney alone can save over $1,500 in travel expenses and productivity by not flying somewhere to attend a meeting. Because lawyers travel often, the Polycom system could represent a savings of more than $30,000 in annual travel expenses and productivity for a single attorney, he estimates.

To Weinberger, what differentiates high-end videoconferencing and telepresence is the size of the screen.

The rooms that have screens bigger than 50 inches and high-quality, high-definition cameras have telepresence setups, he says.

RENT A SYSTEM

Mumbai, India-based Taj Hotels Resorts & Palaces owns 77 hotels on five continents, and the luxury lodging chain's executives wanted a more efficient and affordable way to collaborate during a period of rapid global expansion.

About a year ago, Taj Hotels, a unit of Tata Group, began using GlobalMeet, a high-performance audio and Web conferencing system from sister company Tata Communications Ltd. It uses telepresence for internal meetings and also rents out its videoconferencing rooms to other companies in London, Mumbai, Delhi and Boston.

"It was a fantastic opportunity to be the first hotel group in the world to have a pioneering technology for our clients," says Araceli Rius-Perez, director of sales and marketing at Taj Hotels in London. "It is a real-time conversation; you can see every single sign from the other person, no delay. The colors are real, and it makes you feel you are having a personal relationship."

Taj rents telepresence rooms that can hold up to six people for $400 (U.S.) per hour, she says. "We're not limited to just the other Taj hotels; we can also connect to telepresence rooms at companies in India that share the same technology," with Tata Communications acting as the managed service provider connecting the different systems, she explains.

The rooms have attracted "a level of interest," and customers are booking them, says Rius-Perez, but she doesn't have usage figures yet. "But as more locations come in, we expect the reach will be much greater," she adds.

She says a Tata IT person is on-site at each hotel. According to Caesar Pereira, IT manager at Taj Hotels, international travel costs for the company's hotel executives have decreased by 30%. The company declined to offer specific figures on the savings, but a spokesman acknowledged that 30% translates into "millions" of dollars.

Rius-Perez says use of the telepresence rooms so far has been steady, and customers have found the technology to be unique and easy to use, making for an enjoyable experience, whether for business or personal purposes.

"It is one of the few technologies on a global basis that are 'green,' " she says, "which makes customers feel that we and they are doing their bit." ■

***Shein** is a freelance writer and editor. Contact her at eshein@shein.net. Computerworld reporter **Matt Hamblen** contributed to this story.*

HOW TO HOLD PRODUCTIVE VIRTUAL MEETINGS

In a telepresence meeting, it may seem like you have the undivided attention of the far-flung participants, but that doesn't necessarily mean you're engaging them. Mike Song, CEO of InfoExcellence.com, a business productivity consultancy in Guilford, Conn., offers the following tips to ensure that virtual meetings are productive:

- **Interact every five minutes.** Practice what Song calls "five alive," which means you're interacting with people every five minutes by asking a question.
- **Find a role for each person.** If people read action items or offer up a best practice, they're much more engaged "because they're more a part of the drama," says Song.
- **Turn the gathering into an action meeting and accomplish one of the action items immediately.** "Rather than talking about going to a Web site and logging in and doing something, if people have their laptops, they can go there during the meeting and do the task," Song says.
- **Be decisive.** Whenever the group can make a decision in the meeting, people become more engaged, Song says. Explain how the meeting will be conducted, how the decision will be reached and when it will be made, so you can put it on the agenda to achieve greater momentum.
- **Recount decisions made during the meeting.** Get decisions down on paper (or pixels) afterward to make sure action items are followed up on.

– ESTHER SHEIN

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■ OPINION

Paul Glen

Rent-to-Own Hiring Guidelines

WITH THE economy making a bit of progress over the past few months, IT organizations have been adding contractors as a way of getting things done without the commitment of hiring permanent employees. And they're probably thinking that if things continue to improve, some of those contractors could become permanent hires.

It's a smart tactic. If the economy stalls again, separating from a contractor is much easier than laying off an employee. It's also easier to make a break should the contractor prove to have been a poor choice for the job. But hiring a contractor on a "rent-to-own" basis requires some careful planning. Bringing in a hired gun for a one-time project that's beyond the scope of your shop's usual activities is a very different matter from hiring a contractor to fill in on routine tasks with an eye toward possibly making the relationship permanent.

If your interest in hiring contractors is to find someone you would want make a long-term member of the group, you will need to think carefully about your hiring criteria. Here are some things to consider:

Skills. Obviously, the first thing to look for is ability. If you want a contractor rather than a potential employee, then your assessment may stop here.

Mind-set. Some people become contractors because they find it fun and lucrative. They can work on many different things and maximize the rewards for their talents. They tend to have wanderlust and will grow restless if a contract outlasts their interest. Many of these sorts of contractors were already working on a contract basis before the recession hit. But today, the ranks of contractors include a lot of talented people who were thrown out of work by the recession. For them, contracting is a way to make a living until the next job offer comes along. You need to know which sort of contractor is sitting across from you.

■ Using a hired gun is very different from bringing in a rent-to-own employee.

Attitude toward work. In today's job market, pretty much anyone will tell you that he's happy to do any job. Paying the rent and feeding the children are powerful incentives. But you need to gauge the veracity of that claim. If the work you are offering doesn't really challenge the contractor, there is a chance that he will end up feeling that the job is beneath him, despite earlier protestations that any job was welcome. There really are people who will gladly go to work on your help desk even though they used to manage 100 people. There are a lot more who feel good about themselves only if they believe that their most valuable skills are engaged. You need to know which is which.

Engagement. While most contractors are able to work well with others, participation and cooperation are not the same as emotional commitment. We want more than collaboration from employees; we want them fully engaged in the organization, with a sense of connection to their fellow employees and the organization as a whole.

Cultural fit. This is perhaps the most subtle aspect of hiring. There's more to it than thinking about how the new contractor will fit in; every new hire has the potential to broadcast a powerful message to others about what the organization values and what it aspires to. The people you bring in are a way of reinforcing the current culture or beginning the process of change.

This is a great time to hire people. The pool of available technical and managerial talent is probably larger and of higher quality than at any time in recent memory, perhaps ever. By all means, take advantage of the opportunity, but consider your choices with great care. ■

Paul Glen *is a consultant who helps technical organizations improve productivity through leadership, and the author of the award-winning book* Leading Geeks *(Jossey-Bass, 2003). You can contact him at info@paulglen.com.*

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NO RUSH To Virtual Desktops

Windows 7 may prompt some CIOs to try desktop virtualization, but widespread adoption is still years away.

BY KEVIN FOGARTY

MICROSOFT CORP. is pushing desktop virtualization as a way of making Windows 7 play nicely with old applications, especially those written for Windows XP. So now that the technology has been "blessed" by Microsoft, should we expect a desktop virtualization boom?

Probably not, most experts agree. "Adoption is ramping up slowly due to complexity and cost," according to a recent pre-

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sentation by Forrester Research Inc.

That said, though, there will likely be an uptick in the acceptance of desktop virtualization for a couple of reasons. First, more vendors are offering virtual desktop infrastructures, which give each end user a private "desktop." VDIs use the same kind of hypervisors that allow many virtual machines to run on a single physical host. But rather than running five- or 10-server VMs on one physical server, a VDI can run 50 PC operating systems, each of which serves a single end user.

The other big change is support for peripherals, multimedia and other Web- and PC-focused technologies. Those haven't been available to users of shared-image terminal-services types of systems — that is, traditional desktop virtualization setups — but nowadays most other users think they can't live without them.

"Improvements in the user experience are really a big deal in making desktop virtualization more acceptable," says Andi Mann, an analyst at Enterprise Management Associates Inc. (EMA).

Giving end users all the benefits and all the capabilities they'd have on stand-alone machines — including the ability to add or update their own browser plug-ins, media players and other "extraneous" software — could overcome most of the objections of business units that have kept virtual desktops out of the mainstream user base, Mann says.

UPDATING OLD PCs

The fact that some companies are unwilling to upgrade their PC hardware so that it's capable of supporting Windows 7 could also help make virtual desktops more popular, according to Chris Wolf, an analyst at Burton Group, now part of Gartner Inc.

Implementing Windows 7 requires upgrading hardware, updating custom-built software, training end users and updating the security on PCs running the new operating system. That process can be so expensive and disruptive that many companies are asking consultancies like Burton Group to evaluate whether it makes sense to leave end users on their present hardware and upgrade them by running Windows 7 as part of a virtual-desktop connection, Wolf explains.

Connecting end users to a new operating system on a server can more than double the life of an aging PC while still giving end users all the power and support for new software and new technology they want, according to Peter Graves, CIO at Ionia, Mich.-based Independent Bank Corp.

About 90% of Independent Bank's users already have shared-session virtual desktops from Citrix Systems Inc., and Graves says that adding the other 10% will be no great leap once the technology supports the customized software and peripherals they need.

The same is not true of most companies, many of which have little history with or understanding of virtual desktops and are just getting used to virtual servers, cloud computing, and cost- and labor-saving IT tactics, Mann says.

This may explain why desktop virtualization has yet to take off even though it has been around for at least a decade.

Numerous surveys of corporate IT managers reveal tremendous interest in desktop virtualization but not much adoption. "We've been looking for a sharp inflection in sales of virtual desktops for three years," Mann says, but it hasn't taken place.

What's the holdup? An EMA survey of 102 IT managers last year found that the top three barriers to desktop virtualization are all human factors: lack of skills or knowledge, internal political issues, and a lack of resources.

THE ROLE OF WINDOWS 7

Banks, hospitals, schools, government agencies and other enterprises that have tight budgets or are strictly regulated are the organizations that are most likely to embrace desktop virtualization.

Companies that have resisted terminal-services-based virtual desktops as too clunky, too restrictive and too off-putting to independent-minded

AT A GLANCE

Desktop Virtualization

A computing environment that is abstracted from the end user's PC. It consists of an operating system, applications and associated data

Local desktop virtualization The entire desktop environment – essentially a very large file – executes in a protected "bubble" on the end user's PC. Vendors in this market include Microsoft, MokaFive, Parallels and VMware

Hosted desktop virtualization. The desktop environment executes on data center servers, alongside other virtual machines Vendors in this market include Citrix Desktone, Microsoft and VMware

The nine-month ROI that vendors tout may actually be more like three or four years, because the upfront infrastructure and licensing costs far outweigh the upfront benefits. So include other benefits, such as increased security and lower support costs, to make your case for virtualization

"The revolution will take years, but virtualization is the future of the corporate PC"

> **Adoption is ramping up slowly due to complexity and cost.**
> FORRESTER RESEARCH INC.

workers make up an untapped market of prospective customers that vendors hope will rush to adopt new desktop virtualization products, Wolf says.

All of those potential virtual desktops don't have to run on Windows, let alone Windows 7, Wolf acknowledges. While running virtual Windows 7 desktops would be cheaper than the real thing, it's still not as cheap as the virtual XP desktops companies may already be running.

Still, the appeal is there for some customers. Virtualizing a Windows 7 migration gives IT a lot more control by keeping the whole process inside the data center and reducing the hardware and support costs as well, Wolf says.

That might make two big migrations more attractive than just one — at least that's what Microsoft, Citrix and a host of third-party developers are hoping, he says.

MICROSOFT'S DILEMMA

For its part, Microsoft seems to be playing both sides of the issue. The vendor supports desktop virtualization but is leery of anything that would threaten the primacy of the standalone PC as the main business computing platform.

Even Microsoft's desktop virtualization product manager doesn't seem comfortable with the idea that most or all of a major company's PCs could be virtualized.

"We expect to see a significant amount of deployment [of virtual desktops] on Windows 7 from CIOs looking for reduced costs in deploying applications on Windows 7," says Scott Woodgate, the director of Windows product management, who is leading the development of Microsoft's desktop virtualization technology.

While Microsoft is "excited to have an offering" in the virtual desktop market, the company believes customers "should virtualize for the right reasons — for the flexibility it offers — not just focus on the potential cost savings," Woodgate says.

SOURCE ENTERPRISE MANAGEMENT ASSOCIATES INC AUGUST 2009

On the negative side, VDI implementations are more complex to configure than more standard PC-based networks, he contends. VDI networks require administrators to create virtual machines, permissions and policies governing how the VMs behave and the images from which VMs are launched, in addition to configuring and managing a standard PC network.

Some users agree with Woodgate's assessment of the complexity of VDIs. George Thornton, network operations manager for the Montgomery Independent School District in Texas, and Landon Winburn, Citrix administrator for the University of Texas Medical Branch, say that planning virtual desktop rollouts can be intimidating to IT groups that are just getting started.

Figuring out which of several delivery methods will be most effective for specific types of users is difficult, as is creating just a few "golden" operating system images that most users can launch as "their" desktops, rather than trying to keep a different one for each user, Thornton says.

Further, Microsoft's Woodgate worries that companies may overestimate their potential cost savings with virtual desktops because they don't add in the cost of gearing up the data center to support it.

"You're replacing the hard drive of a laptop, which is about the cheapest memory there is, with space in a storage-area network, which is about the most expensive memory there is," Woodgate adds.

CALCULATING SAVINGS

On that point, Woodgate and Winburn disagree. Server- or SAN-based storage is secure, backed-up, cheaper to maintain and far more rarely lost, broken or abused than a laptop hard drive, Winburn says.

And, Thornton says, even looking just at hardware costs, virtual desktops saved his organization about $100 per machine.

The frugal school district used Citrix's free XenServer virtualization software on its servers. "With a thin client and Linux OS on it, half a gig of RAM, a little Atom processor, a license for XenDesktop, plus the cost of a server divided by 30 — we figured we could get 30 VMs per server — we came up with about $550 per unit," Thornton explains.

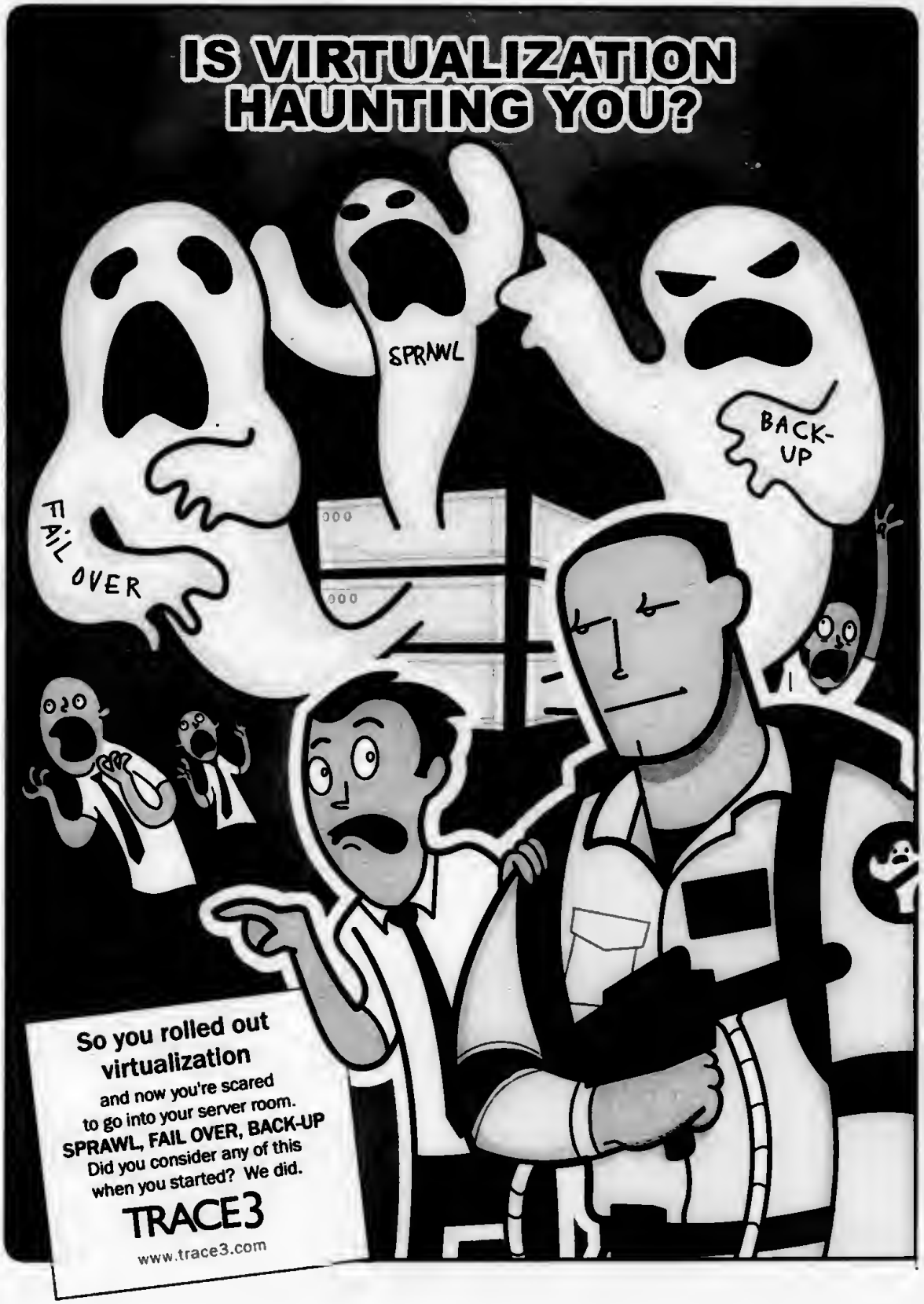
"Compare that to $650 to $700 for a regular PC. Thin clients have no moving parts. They're built to resist heat," Thornton says. "We figure they'll last eight or 10 years, compared to the three or four Gartner recommends for a PC. That raises the savings even more."

It's not just K-12 education in Texas that's tapping the power of virtualization. At the University of Texas Medical Branch medical school, the support, hardware and network load are

Continued on page 30

"Thin clients have no moving parts. They're built to resist heat. We figure they'll last eight or 10 years, compared to the three or four Gartner recommends for a PC.

GEORGE THORNTON, NETWORK OPERATIONS MANAGER, TEXAS' MONTGOMERY INDEPENDENT SCHOOL DISTRICT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> **You're replacing the hard drive of a laptop, which is about the cheapest memory there is, with space in a storage-area network, which is about the most expensive memory there is.**
> SCOTT WOODGATE, DIRECTOR OF WINDOWS PRODUCT MANAGEMENT, MICROSOFT CORP.

Continued from page 28

different, depending on what type of virtual desktop is involved, Winburn says. But any kind of virtual desktop delivers a far more efficient use of IT resources than putting all the power of a PC on every user's desk, he explains.

"The big difference is that you don't have to support the endpoint — just the user settings and the network and servers," Winburn says. "I could put five or six PCs on a T1 at a clinic somewhere, and people are going to complain that Outlook is slow to open or it takes too long for browsing. I could throw 30 or 40 [Citrix thin clients] on that connection sharing one desktop image back in the data center, and they run like a champ."

EXPANDING OPTIONS

Traditional, terminal-services-based virtual desktops allow dozens or hundreds of end users to sign onto a single operating system and set of applications, all running on a back-end server. That keeps costs very low but limits or eliminates the ability of individual users to configure their own environments. It also keeps them from viewing bandwidth-intensive video, Flash animation or other multimedia, whether on the Web or on controlled internal applications. This happens because most desktop virtualization software doesn't have a mechanism to support it, Mann says.

That's changing with newer versions of the server software from both Citrix and Wyse Technology Inc. Citrix's recently released XenDesktop 4 supports not only multimedia, but also USB connections at the client side. The result is that end users can plug in peripherals like printers, scanners and memory sticks, or even fans, lights and desktop toys, if they like, Mann says.

VMware Inc., long the leader in the virtual server market, plans to release similar support in its VMware View VDI products early this year.

But even then, it will trail Citrix in the number of delivery methods it offers for virtual desktops and the breadth of products tailored to specific problems. One of the offerings that sets Citrix apart is Citrix Branch Repeater, which slashes the amount of bandwidth required for remote sessions of the notoriously chatty Exchange server, Mann says.

Another is Citrix's HDX technology, which eliminates one of the few barriers to using a virtual PC just like a real one, according to Graves. HDX allows users of VDI-based virtual desktops to run Web-based multimedia and to plug USB devices into their local machines, even if the software operating the peripherals and the browser is running in a data center somewhere, Graves says.

STILL TACTICAL

Given all the variables that are still in play, there probably won't be an explosion of Windows 7-inspired desktop virtualization in corporate America anytime soon, says IDC analyst Michael Rose.

Traditional shared-session virtual desktops will remain popular in their usual niches, whether with Windows 7 or other operating systems, Rose says. It will take time, however, even for companies eager to use newer VDI systems, to add the network and server capacity they require.

"It would involve significant spending in the data center to accommodate adding vast numbers of users on virtual machines," he says. "Desktop virtualization will continue largely to be a tactical technology, though as it moves more toward the endpoint device — handhelds and other nontraditional hardware — there's more of a possibility it will become very common."

Bottom line: Windows 7 could be a catalyst for some additional virtualization, given improvements in the technology that have helped mitigate concerns over performance, lack of personalization and other issues.

However, this technology isn't seamlessly stitched together yet. Administrators still have to master the nuances and best practices, and few will want to make the transition to virtualization at the same time they convert to Windows 7. ■

Fogarty, *a former* Computerworld *editor, is a freelance writer covering IT, science and engineering. Contact him at kfogarty@technologyreporting.com.*

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In Search of Data Center Space

Many CIOs are leasing from third-party providers instead of building their own data centers, but there's a shortage of space in some markets.

By Robert L. Mitchell

BEDYTA PAWLOWSKA/FOTOLIA.COM

CAPITAL constraints during this economic downturn have led many CIOs to lease data center space instead of constructing their own facilities.

In turn, businesses like Digital Realty Trust Inc. — which offers move-in-ready enterprise data centers that include security and rack-ready raised floor space — have found that they can't prepare new space fast enough to meet demand. These businesses, sometimes called wholesale data center facility operators, typically cater to large organizations and high-tech companies that need large amounts of data center floor space.

Digital Realty Trust has begun focusing more on the enterprise data center market by offering custom design, construction and management services. Some enterprise IT operations are also working through collocation providers, which provide smaller, caged space in shared facilities and offer less flexibility on the design.

The increased demand for leased data centers is being driven by reluctance on the part of CIOs to make the capital investments needed to buy and build such facilities for themselves.

Nobody has the capital to build new data centers right now, says IDC analyst Michelle Bailey. And a glut of data center space developed during the dot-com boom has finally been filled in recent years, leaving enterprise-class data center real estate in short supply. "Anyone moving forward with new space has to consider a third-party operator," Bailey says.

As credit markets have slowly started to pull back from the abyss, IT executives have begun preliminary discussions with consulting firms about new data center designs. But most enterprises aren't yet ready to build new data centers themselves — even if they can line up the financing.

In an uncertain market, chief financial officers are skittish about financing capital expenditures that can easily top $100 million. "They're spooked. They don't want the risk of having debt increase," says Carl Weddle, director of IT at Quality Trailer Products Inc. in Azle, Texas. The problem, he says, is that when cash is tight, the only way to fund an infrastructure project is with debt.

Financial executives are still funding some investments inside the data center — especially those that reduce operating costs, such as virtualization projects that consolidate physical servers — and some organizations are starting to build private cloud infrastructures. But that doesn't mean they want to take on mort-

EXPANSION PLANS

of U.S. companies plan to expand their data centers in the next 12 to 24 months.

of those companies plan to do so by leasing from a wholesale data center provider.

gage debt for a new facility.

They are, however, quite willing to lease. And that has driven up demand for raw data center space, despite the downturn, and created shortages in markets from London to Washington, D.C., to Silicon Valley.

Digital Realty Trust claims that its facilities are 95% occupied, and it has been gobbling up properties of late, increasing its rentable-space footprint from 12.9 million square feet to 14.9 million over the past 12 months. "We're seeing very strong demand driven by a number of factors, including the tight capital markets," says Chris Crosby, senior vice president for corporate development at the San Francisco-based company. Research firm Gartner Inc. also reports an uptick in enterprises looking for data center space.

Some organizations are using hosted space as a stopgap measure until their own design and construction efforts get back on track, says Gartner analyst Dave Cappuccio. Others are using leased facilities to host entire data center operations.

"We're seeing very strong demand driven by a number of factors, including the tight capital markets."
CHRIS CROSBY, SENIOR VICE PRESIDENT, DIGITAL REALTY TRUST INC.

COLLOCATION REVISITED

In the past decade, large corporations have changed their view of leased services. "The 'co-lo' model has gained a lot of acceptance since the dot-com days. Even financial institutions are not afraid to use them," says Peter Gross, vice president of Hewlett-Packard Co.'s Critical Facilities Services unit, which primarily designs data centers and doesn't lease space.

Online brokerage Scottrade Inc. is one such financial firm. CIO Ian Patterson worked with a third-party facility provider, which he declined to name, to host a new data center in Scottsdale, Ariz. The facility will alternate between functioning as a backup disaster recovery site and as the primary data center that handles performance- and bandwidth-intensive online trading activity. The vendor provides the facility; Scottrade installed and manages its own equipment.

The site will initially function as a backup data center. "Our working plans are to flip over to it in the June/July time frame in 2010. Every six months we'll flip facilities to run them hot," Patterson says.

With plans like that under way, the financial market's purse strings have loosened for the stronger providers of collocation facilities. For example, data center facilities provider DuPont Fabros Technology Inc. had to temporarily halt construction of new data centers last year but has since secured funding to move forward. And in January, Digital Realty Trust sold more than $600 million in unsecured notes to fund operations and continue adding capacity.

For now, however, the demand for space continues to outstrip supply, and that has left many businesses with few choices for their enterprise-class data centers.

Some businesses still prefer to do it themselves. Thin-client terminal manufacturer Wyse Technology Inc. is setting up a private cloud in its data center in India and is planning for a possible expansion. "The funding is available," says Chief Innovation Officer Henry Fieglein. Wyse has enough cash to fund the project internally — and its management is willing to commit the resources.

But Wyse is an exception. Fieglein, who says he has talked to many enterprise IT executives about their data center plans over the past year, acknowledges as much. "Yes, the money is being freed up, but I haven't seen anyone purchase the land and everything else to build a data center," he says.

The recession may permanently change the way that many organizations approach the build-out of new data centers. Certainly, service providers are banking on CFOs pushing business their way. But whether the current strong demand for data center space and managed data center services is a bubble or a permanent trend won't be clear until the economic recovery begins in earnest.

For his part, Gross says he doesn't expect to see that happen for at least another six months. ■

Initiative Crashes Into Security

You miss **one meeting,** and suddenly all of the company's IP is about to be **put at risk.**

Trouble Ticket

AT ISSUE: An initiative to solve a latency problem involves opening the HTTPS port to the Internet.

ACTION PLAN: Put the brakes on this idea until all security risks have been mitigated.

As a manager, I love seeing employees show initiative. So it isn't easy to say no when someone does that. But as a security manager, I am rigidly opposed to anything that would make us vulnerable. This week, initiative and security clashed.

The conflict arose from a new program we call Innovation. It's sort of like the old suggestion box, allowing folks in IT to put forward ideas for improving processes and systems. If the proposal is approved, the person who thought of it can go ahead. I usually attend the meetings where ideas are reviewed, as a way to ensure that no new initiatives pose a security risk. I can't make it to all of the meetings, though, and a couple of weeks ago, I missed one at which the Innovation team gave the green light to a suggestion that we use Akamai to enhance the speed of one of our core applications.

The idea was to address the availability and latency issues that we've been having with one of our product life-cycle management programs. Our facility in Israel has been complaining that it takes too long to render data from the application. Because it is our largest manufacturing site, their complaints echo loudly, and they usually get what they want.

I knew nothing about the Akamai plan until earlier this week, when I received an e-mail from the network operations manager in charge of the change control process. He was concerned about a planned network change to our core firewalls and wanted to be sure that I approved of it. Innovation initiatives aren't supposed to involve any major changes to the infrastructure. That's what "projects" are for.

I stopped by our lead security engineer's cube and asked him what network changes were in store for the Akamai initiative. He told me that the plan was to add a single rule in our externally facing firewall allowing Port 443 (better known as HTTPS) access to an internal application living on a Web server. It would be OK, he said, because the traffic was encrypted and we were masking the real identity of the Web server. No, I said, opening the firewall to internal infrastructure would be unacceptable; encrypting the traffic gives you encrypted traffic but does nothing to prevent attacks.

■ Encrypting the traffic gives you encrypted traffic but does nothing to prevent attacks.

ONE SORRY SERVER

On a hunch, I did a quick assessment of the Web server, and sure enough, it wasn't patched properly. In fact, the server was in really bad shape. Security patches and the antivirus engine were not up to date, a lot of unneeded services were running, and the application was susceptible to cross-site scripting and SQL injection.

Next, I wanted to know whether our intellectual property would reside on servers outside our company. The answer I got was that only the Web page portions of the application would be optimized and that our IP would not reside on the Akamai servers. Very strange, I thought, since the whole point of the Akamai service is to get data as close to the end users as possible.

Since the complaints from Israel involve the downloading of large files, it's only reasonable to assume that the large files must reside on the Akamai infrastructure. Some discussions with Akamai proved me right. Worse, the testing involved a mirror of our production application, including all our valuable IP. I need to see the nondisclosure agreement, I said. I wasn't encouraged when everyone avoided my gaze. Sure enough, there was no NDA.

This simple initiative was turning into a security nightmare, and I had no choice but to reject the change control until the risks are mitigated. We'll get there, just not as fast as some people would like. ■

JOIN IN
To join in the discussions about security, go to computerworld.com/blogs/security

This week's journal is written by a real security manager, ***"Mathias Thurman,"*** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

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■ OPINION

Preston Gralla

Windows Phone? No App for That

LOOKING FOR the niftiest new mobile app? You might find it on an iPhone or an Android device, but not on a Windows phone. Developers' apathy and a fast-falling market share mean that Microsoft's mobile phone business is in the doldrums. And that in turn may mean trouble for all of Microsoft several years from now.

A recent survey confirms what everyone already knows: Developers are spending their time writing nifty apps for the iPhone, Android phones and BlackBerries, not for Windows phones. In March, Appcelerator surveyed more than 1,000 developers and found that 87% were interested in developing apps for the iPhone, 81% for Android phones, 53% for the iPad, 43% for the BlackBerry, and a lowly 34% for Windows Phone 7.

That's only part of the bad news for Microsoft. The company's market share of mobile subscribers has also taken a deep plunge. Market research firm comScore says that between October and January, Microsoft's share of the market fell from 19.7% to 15.7%. RIM, the maker of the BlackBerry, remained the leader, growing from 41.3% to 43%. Apple's iPhone increased slightly, from 24.8% to 25.1%, and Google's Android grew by more than 250%, going from 2.8% to 7.1%.

Microsoft has known for some time that its Windows-based mobile operating system is in trouble and an also-ran, and so it has revamped it thoroughly. But that revamp may be too little, too late. New Windows 7 phones won't be out until the holiday season, and in the meantime, Microsoft's competitors will all gain market share at the company's expense.

Research firm Canalys says that sales of Microsoft mobile devices will fall in 2010 compared to 2009, and sales by its competitors will soar. It predicts that for the full year, Microsoft will drop to a mere 7.2% of the market, while Android will roar past it to 18.9%. Canalys has Apple barely beating Android, with 21.3% of the market, and it puts RIM at 43%.

■ True, phones are an insignificant part of Microsoft's revenue stream. But that's not the point.

By the end of 2010, Microsoft will be so far behind its competitors that it will likely never catch up. The issue isn't just market share and the perception that Windows phones aren't as worthy as the competition. It's also that Microsoft is losing the app war — badly. With developer interest lagging and market share dropping, there will be far fewer great apps for Windows Phone than there are for its competitors. And it is apps that drive mobile phone purchases.

Should Microsoft even care that the Windows Phone platform seems headed south? After all, its revenue from phones isn't significant. But the fact is, mobile devices of all kinds are the future, and they are where massive growth is.

Smartphones are essentially computers with telephone appendages. That's where most computing and a good deal of work — even enterprise-level work — will be done in the future. And no matter what you think of the iPad, it's another example of a non-desktop personal computer — and, of course, there's no version of Windows on it. Expect more non-PC, mobile computers to be released without any version of Windows on them.

Today it doesn't matter. Tomorrow it will. Microsoft's problem is not just that it might not be able to tap into the greatest growth market in computers. Its main business will also be affected. What if Google forges links between its mobile phone Android operating system and its netbook (and possibly PC) Chrome operating system? Will enterprises consider moving at least in part away from Windows and toward Chrome? Will iPhones, iPads and iAnythings make more enterprises consider using Mac OS X? All that is entirely possible. And that's when Microsoft will really face trouble. ■

Preston Gralla *is a contributing editor for* Computerworld.com *and the author of more than 35 books, including* How the Internet Works *(Que, 2006).*

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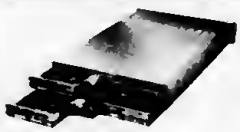

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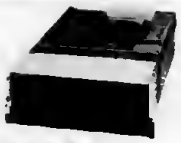

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A new bowling alley opens up near the office where this IT pilot fish works, so he and his co-workers decide to try it out – and their manager tags along. "Unfortunately, we managed to break out of the screen while entering our names," fish reports. "We decided the best course of action was to leave it alone and get the people at the alley to fix it. This wasn't good enough for our manager, who decided that since he worked in IT, he could fix it. At this point we tried to hide and pretend he was not with us." But the IT manager persists. And after lots of typing and some poking at the screen, his results are just about what you'd expect. "All games in the 24 lanes stopped for 20 minutes," sighs fish. "Every game was cleared and had to be restarted from the first frame. And as a group, we were politely asked to go to a different bowling alley next time."

That's Automation?

This developer is responsible for a daily report to managers at a manufacturing site. "He had put together a process to automatically send out the report every weekday at 8 a.m.," says a pilot fish on the scene. "This report was a big deal, and he had worked on it for several months. It was fairly reliable but would occasionally break, and he'd get a call to fix it. Eventually there was a downturn, and the developer was let go. The very next week, the report failed to run. We looked everywhere but couldn't find the process to automatically generate the report. There was no evidence anywhere that a batch job had been set up to run it. Finally someone suggested that he might have been manually running the report every day. 'Well,' his manager said, 'that would explain why it ran three hours late when he was on vacation in California.' "

Oh, by the Way . . .

Support pilot fish gets a call from a user who says her monitor won't come on. "I ask if she's checked that the power cable and video cable are plugged in tight on the back of the monitor as well as on the system unit," says fish. "She says she's already checked that and they're all tight. She then offers that the power light on the monitor is on, but there just isn't any picture. I ask if perhaps the system unit isn't switched on. She says she's already checked that – the power light on the system unit is on. I ask if she has tried rebooting, and she says she's tried it twice with no luck. I tell her I'll be up in a few minutes to check it out, and she asks if she should leave the system on or off. I tell her she can turn it off, since I'm going to have to open it anyway. Good, she says, since the smoke is rather smelly. *Smoke?!?*"

■ *Sharky knows that where there's smoke, there's probably a true tale of IT life. Send me yours at sharky@computerworld.com. You'll score a sharp Shark shirt if I use it.*

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■ OPINION

Frank Hayes

Why IT Should Love the iPad

QUICK — how many iPads are in your users' hands right now? You don't know? Of course not. Your IT shop isn't supporting the iPad. You probably can't even figure out what an iPad is good for.

Besides, you've got bigger problems, like network security and malware and spam.

But what if you could dump those problems *onto* the iPad?

Look, where do most of our Internet-based miseries come from? Users. Specifically, users doing what users do on the Internet. They go to dangerous Web sites. They click where they shouldn't. They fill up their company PCs with viruses and worms and spam — along with videos of kittens and MP3s of questionable legality.

Why do we let them do that? Because a decade or so back, when the World Wide Web was shiny and new, office PCs were the only devices they had with fast network connections. Keeping users locked out of the Internet was more trouble than it was worth — they kept finding new ways around whatever walls we put up. And their managers were no help, because the managers wanted to use the Web for personal stuff too.

So users did their surfing and shopping and video streaming, and IT did its best to keep up — deploying spam filters, whitelists and malware blockers as it grappled with an endless stream of otherwise unnecessary trouble tickets. And using work PCs for personal surfing became a standard perk.

Enter the iPad.

It's small. It's light. It has a big, bright color screen. It has Wi-Fi and 3G, so it can offer network connections that are at least as fast as those of office PCs.

Put simply, it may be the perfect personal Internet-surfing device. (And even if it's not, it'll soon be followed by a tidal wave of iPad-wannabe competitors that should force Apple to speed up the addition of support for multitasking and the delivery of features like a camera.)

■ When the Web was new, an office PC was a user's only fast network connection.

Does the iPad have a place in business? Sure it does — *as* a personal Internet-surfing device.

The question isn't whether we should support the iPad with our business applications. Instead, we should be figuring out how to get all that *nonbusiness* user stuff off our PCs and onto the iPad.

Think: What would it cost to create a separate Wi-Fi network in each office for users' personal surfing? A few cheap access points, just enough security, maybe some new wire to pull.

Now, how much would you save if you could offload all the user Internet junk onto that separate network? You could lock down PC connections — hard. You could dramatically reduce your network management headaches, and probably reduce the bandwidth you need, too.

Users would still have that fast-network perk — just not on their work PCs.

You'd finally be able to enforce your "no personal e-mail" rules, your "no streaming video" rules and your "no clicking on unknown Web sites" rules — at least on your office PCs. And if a user fills up his iPad with spam or gets infected, that's his problem. If he hogs bandwidth, other users can, um, let him know about it.

Nearly all the legal and HR problems that come with personal use of office PCs can go away too. Pornography, music and video piracy, and inappropriate e-mails will be on users' own machines — and out of IT's hands.

See? We really *can* drop all those problems onto the iPad.

Because really, users don't need work PCs for personal Internet use. Let's leave them to their own devices — smartphones, BlackBerries, netbooks and, of course, tablets.

And, just maybe, we'll discover what the iPad is good for: making life easier for IT. ■

Frank Hayes *has been covering the intersection of business and IT for three decades. Contact him at cw@frankhayes.com.*

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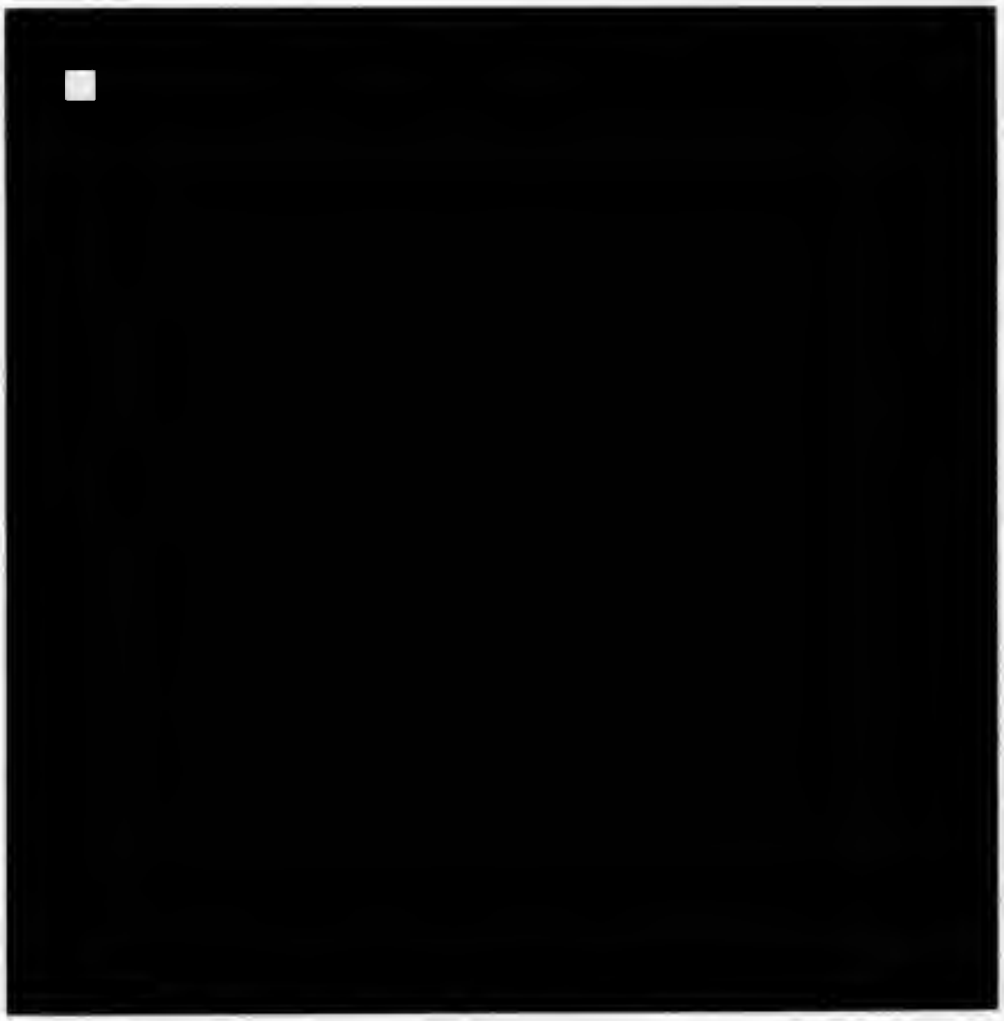

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